1-2015

BIOB 101N.12C: Discover Biology Laboratory

Gregory Peters
University of Montana - Missoula, greg.peters@mso.umt.edu

Biology 101: *Discover Biology* Spring 2015 Syllabus

Class Meets: T & Th 1:10-2:00 in MonTEC conference room
Lab meetings: T (section 12) or Th (section 11) 2:10-4:00 at MonTEC in room 129
Instructor: Greg Peters. Contact: greg.peters@mso.umt.edu or (406) 207-6154
Office hours: T & Th 10:00-12:00 in HB02 at Missoula College

Required texts:
Lecture: *Essential Biology 5th ed*. By Simon, Reece & Dickey. 2010.
Laboratory: *Custom Lab manual available through Missoula College bookstore only*

Course Content:
We will explore topics such as the chemical and cellular bases of life, genetics, evolution, biodiversity, and human impacts on the living world. Important course objectives include developing a deeper understanding of the fascinating features of the living world and helping all of us make well-informed decisions about issues with a biological component.

How to succeed in this course:
Regular attendance in both lecture and lab is critical. Many lab activities cannot be prepared to accommodate one person, and therefore cannot be made up under any circumstances. Reading textbook assignments before lecture will ensure the best understanding of classroom content. Reading lab instructions before lab will help lab move more smoothly and will better prepare students for lab quizzes. Working in groups during lab exercises and in discussions of lecture material can be helpful to your understanding, and is encouraged. Students are expected to work alone during all exams and quizzes.

Make-up exams will be permitted only for extreme and documented reasons. No early final exams will be given, so make any travel plans accordingly. Students registered with DSS will be given disability accommodation during exams. Please contact me one week before each exam if you require any service through DSS. Instructor office hours are time reserved for helping students; come to office hours with any questions. Your NetID will provide access to an online Moodle supplement to this course that includes portions of the presentations used in class and access to course documents and grades.

Adds, drops, and changes of grading:
University policies on drops, adds, changes of grade option, or change to audit status will be strictly enforced in this course. Please note that after the 45th day of the semester, such changes are not automatically approved. A grade of C or higher will be considered passing for the P/NP option.

Laboratory overview:
The lab activities are an essential component of this course, and will make up 1/3 of your course grade. There is one final grade for class and lab integrated together. The laboratory component of this course provides an opportunity for hands-on learning that expands on topics introduced in lecture. Students are expected to read the relevant lab activity before coming to lab each day.

Grading:

Exams (3)	300 pts	
Take-home final exam	50 pts	
Bio-book chapter assignment	50 pts	90-100% = A- to A
Quizzes (highest 10 of 11)	100 pts	80-89% = B- to B+
Presentation	30 pts	70-79% = C- to C+
Plant Growth Lab Report	30 pts	60-69% = D- to D+
Lab Manual	40 pts	<60% = F
Total	600 pts	

Exams:
There will be 3 exams covering the material presented in the main units of the course. Students are expected to work alone and without outside resources on all exams.

Take-home Final Exam:
The final unit will conclude with a take-home, open-book exam due during finals week

Bio-book Chapter Assignment:
Each student will write and illustrate a professional 4-5 page analysis of one critical topic in biology. Detailed instructions will be available and discussed in class.

Quizzes:
There will be quizzes at the beginning of most labs (don't be late) covering material from the previous week's lab.

Presentation:
Near the end of the semester, students will give presentations on current research in Biology. Details will be offered as the project approaches.

Plant Growth Experiment & Lab Report:
The plant growth lab will be evaluated with a formal, written lab report in addition to a lab quiz. Expectations and suggestions are provided in the lab manual.

Lab Manual:
Students will be expected to record lab activities through written observations, sketches, records of findings, and personal reflections throughout the semester in their lab manual.

BIOB 101: Lecture Outline

Date	Lecture Topic	Reading (focus)
1/27	Course Introduction	--
1/29	Biology; Science as process	Ch. 1 (4-5, 14-8)
2/3	Chemical basis of life	Ch. 2 (24-31)
2/5	Molecules of life	Ch. 3 (38-50)
2/10	A tour of the cell	Ch. 4 (58-70)
2/12	Cell functioning	Ch. 5 (76-86)
2/17	Exam 1 review	
2/19	**Exam I**	
2/24	Cellular respiration	Ch. 6 (92-101)
2/26	Photosynthesis	Ch. 7 (108-15)
3/3	Cell division	Ch. 8 (122-9)
3/5	Intro to genetics	Ch. 9 (146-59)
3/10	DNA function	Ch. 10 (174-87)
3/12	Genetic engineering	Ch. 12 (220-5)
3/17	**Exam II**	
3/19	Evolution	Ch. 13 (244-51)
3/24	Evolution	Ch. 13 (252-5, 260-4)
3/26	Evolution	Ch. 14 (270-9)
3/30-4/3	*Spring Break*	
4/7	Classification of life	Ch. 14 (285-9)
4/9	Prokaryotes and protists	Ch. 15 (299-311)
4/14	Plants and Fungi	Ch. 16 (316-32)
4/16	Animals	Ch. 17 (338-60)
4/21	**Exam III**	
4/23	Ecosystem function	Ch. 18 (374-7, 380-90)
4/28	Human impacts on ecosystems	Ch. 18 (392-7)
4/30	Population biology	Ch. 19 (408-11, 417-20)
5/5	Living systems	Ch. 20 (425-32)
5/7	Energy flow & course wrap up	Ch. 20 (432-9)
5/12	**Final Exam**. Tuesday, 1:10-3:10, same lecture room	

BIOB 101: Lab Outline – section 12 (Tuesdays)

Date	Lab Topic	Quiz/ Assignment due:
1/27	*No Lab*	
2/3	1. Intro; microscopes	
2/10	2. Cells	Quiz 1
2/17	*No lab*	
2/24	3. Pondwater	Quiz 2; Notebook review
3/3	4. Energy Transformations 1	Quiz 3
3/10	5. Energy in Life 2; Begin Experiment	Quiz 4
3/17	6. Cell division & genetics	Quiz 5
3/24	7. Evolution & Experiment	Quiz 6
4/7	8. Evolution	Quiz 7
4/14	9. Microbes; conclude experiment	Quiz 8
4/21	10. Classification	Quiz 9; Report due
4/28	11. Ecology	Quiz 10; Notebooks due
5/5	12. Presentations	Quiz 11

BIOB 101: Lab Outline – section 11 (Thursdays)

Date	Lab Topic	Quiz/ Assignment due:
1/29	*No Lab*	
2/5	1. Intro; microscopes	
2/12	2. Cells	Quiz 1
2/19	*No Lab*	
2/26	3. Pondwater	Quiz 2; Notebook review
3/5	4. Energy Transformations 1	Quiz 3
3/12	5. Energy in Life 2; Begin Experiment	Quiz 4
3/19	6. Cell division & genetics	Quiz 5
3/26	7. Evolution & Experiment	Quiz 6
4/9	8. Evolution	Quiz 7
4/16	9. Microbes; conclude experiment	Quiz 8
4/23	10. Classification	Quiz 9; Report due
4/30	11. Ecology	Quiz 10; Notebooks due
5/7	12. Presentations	Quiz 11